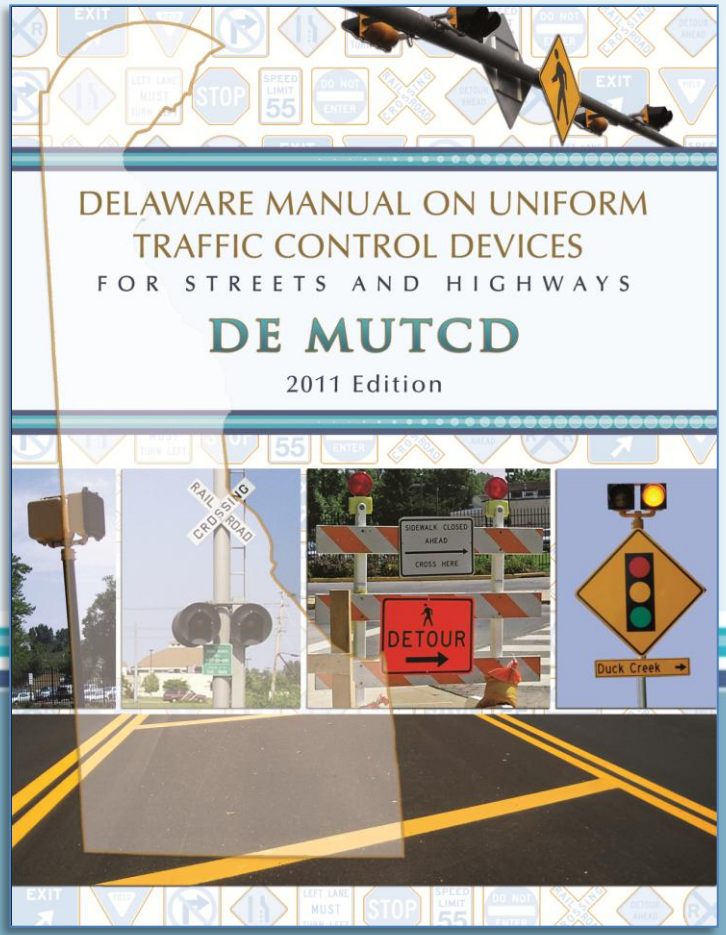
DelDOT
Delaware Department of Transportation

Delaware MUTCD



Part 6
TEMPORARY TRAFFIC CONTROL

DelDOT Winter Workshop
February 25, 2011

PART 6 TEMPORARY TRAFFIC CONTROL

- 6A: General
- 6B: Fundamental Principles
- **6C: Temporary Traffic Control Elements**
- **6D: Pedestrian and Worker Safety**
- 6E: Flagger Control
- **6F: Temporary Traffic Control Zone Devices**
- 6G: Type of Temporary Traffic Control Zone Activities
- **6H: Typical Applications**
- 6I: Control of Traffic through Traffic Incident Management Areas

Section 6C.01 Temporary Traffic Control Plans

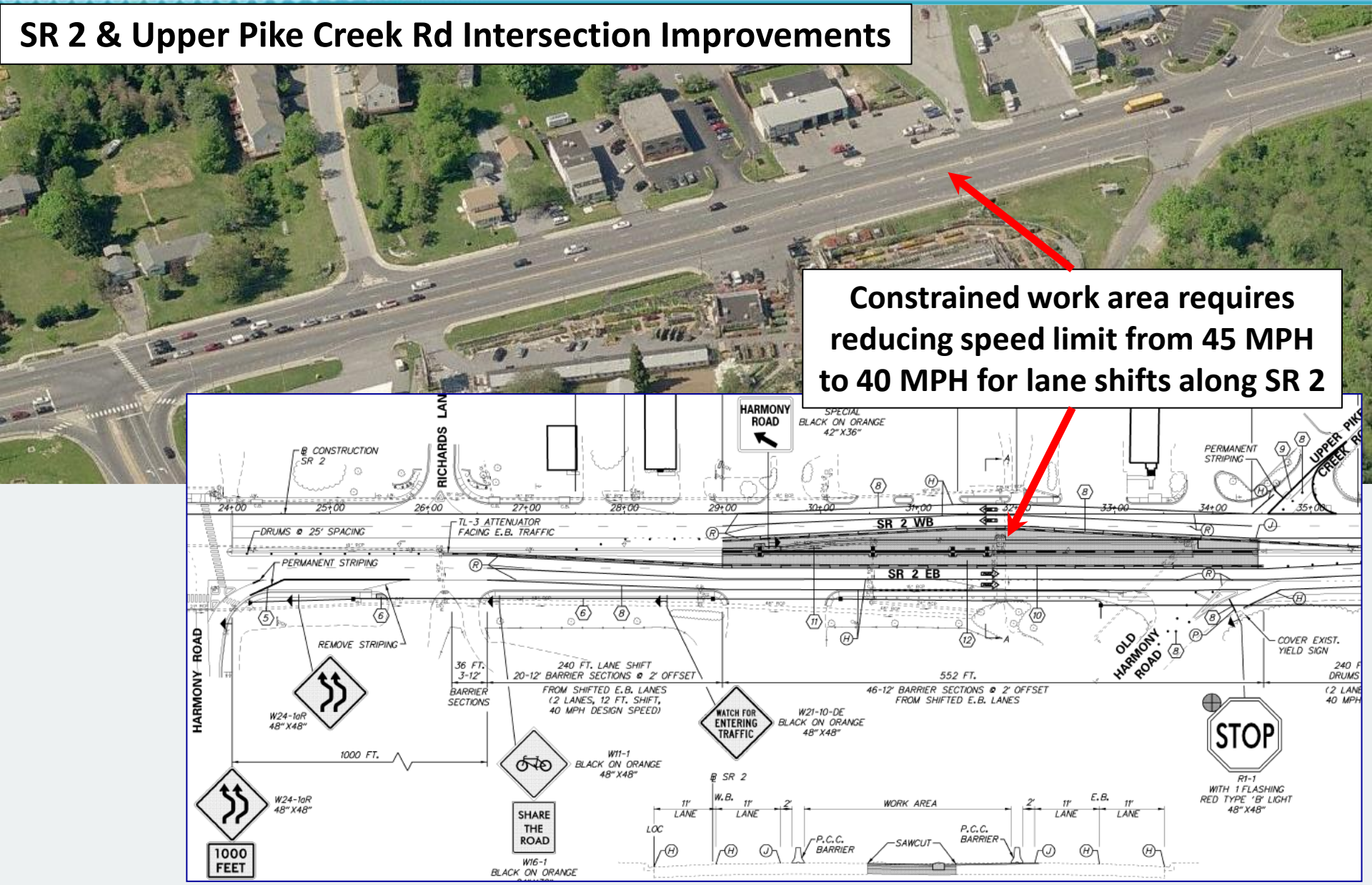
12 *Reduced speed limits should be used only in the specific portion of the TTC zone where conditions or restrictive features are present. However, frequent changes in the speed limit should be avoided. A TTC plan should be designed so that vehicles can travel through the TTC zone with a speed limit reduction of no more than 10 mph.*

12A *(DE Revision)TTC plans should be designed based on the posted speed limit or 85th-percentile speed unless conditions or restrictive features require reduced speed limits to accommodate all necessary TTC zone elements. TTC plans requiring a reduced speed limit should be approved by DelDOT Traffic.*

13 *A reduction of more than 10 mph in the speed limit should be used only when required by restrictive features in the TTC zone. Where restrictive features justify a speed reduction of more than 10 mph, additional driver notification should be provided. The speed limit should be stepped down in advance of the location requiring the lowest speed, and additional TTC warning devices should be used.*

- DE Guidance:
  - *Design based on posted speed limit or 85th-percentile speed*
- *If design is restricted or special conditions exist:*
  - *Speed limit reduction should not exceed 10 mph*
  - *Reduction > 10 mph should be "stepped down"*
  - *DE Guidance: Approved by DelDOT Traffic*

SR 2 & Upper Pike Creek Rd Intersection Improvements



OLD

Table 6C-1. Suggested Advance Warning Sign Spacing

Road Type	Distance Between Signs (ft) *		
	A	B	C
Interstate / Expressway / Freeway	1000	1640 (0.3 mi)	2640 (0.5 mi)
All other roadways	500	500	500

* The column headings A, B, and C are the dimensions shown in the Case Diagrams (see Section 6H). The A dimension is the distance fro the transition distance between the first and second signs. signs. (The third sign is the first one in a thre zone).

NEW

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing
(Delaware Revision)

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Interstate / Expressway / Freeway	1,000 feet	1,640 feet	2,640 feet

* 40 mph or less is "low speed" and over 40 mph is "high speed" on state-maintained roadways.
** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

- *Varying minimum warning sign spacing for different types of conventional roads*

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing (Delaware Revision)

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
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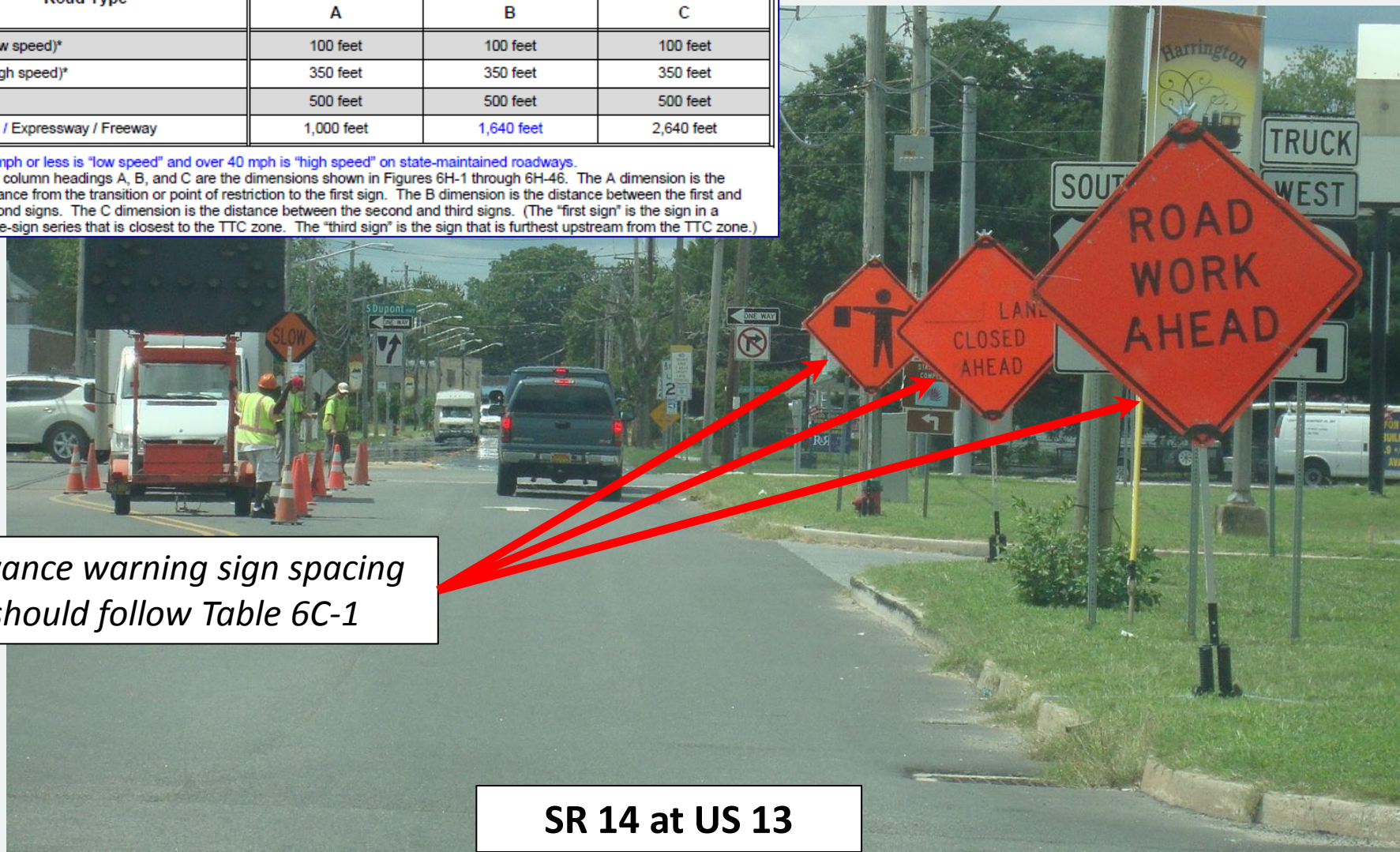
Interstate / Expressway / Freeway	1,000 feet	1,640 feet	2,640 feet

* 40 mph or less is "low speed" and over 40 mph is "high speed" on state-maintained roadways.

** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)



Advance warning sign spacing should follow Table 6C-1

SR 14 at US 13

Section 6C.04 Advance Warning Area

06A *(DE Revision) If the work operation requires a flagger to assist work vehicles entering or exiting the work area, flagger signs (see Section 6F.31) should be used in addition to the typical advance warning signs for each application. If used, the flagger signs should be located at the downstream end of the advance warning area, which typically corresponds with the beginning of a transition taper.*

- DE Guidance: *Supplemental Flagger warning signs used when flagger assists work vehicles entering and exiting the work area*

Supplemental FLAGGER AHEAD sign should be installed upstream of flagger station

SR 141, Kirkwood Hwy to Faulkland Rd

Section 6C.08 Tapers

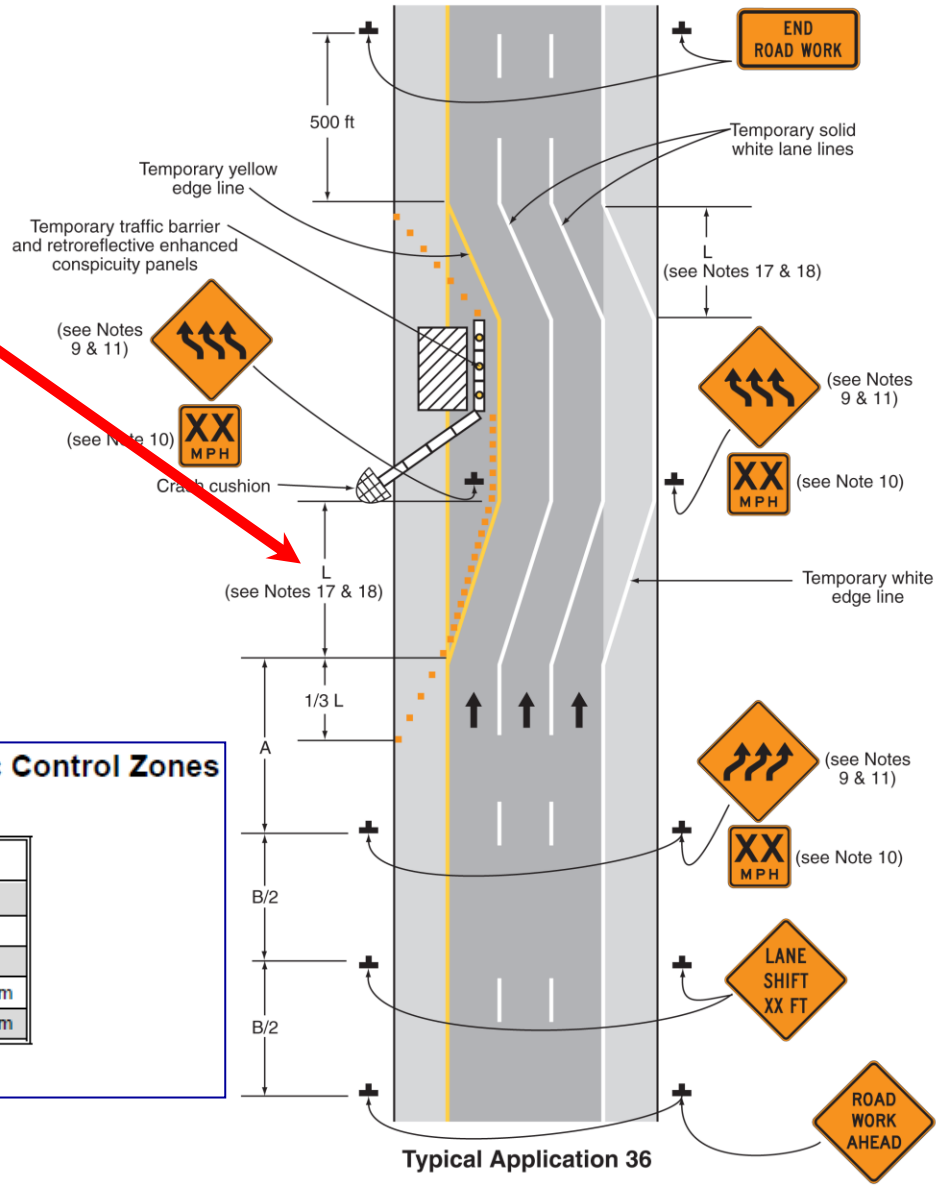
- DE Guidance: *Shifting taper equal to "L" should be used*
- DE Option: Minimum shifting taper of 0.5L

Table 6C-3. Taper Length Criteria for Temporary Traffic Control Zones
(Delaware Revision)

Type of Taper	Taper Length
Merging Taper	at least L
Shifting Taper	0.5 L to L*
Shoulder Taper	at least 0.33 L
One-Lane, Two-Way Traffic Taper	50 feet minimum, 100 feet maximum
Downstream Taper	50 feet minimum, 100 feet maximum

Note: Use Table 6C-4 to calculate L
* A shifting taper length of L is preferred on state-maintained roads

Figure 6H-36. Lane Shift on a Multi-Lane, Divided Highway (TA-36)
(Delaware Revision)



Typical Application 36

Section 6D.01 Pedestrian Considerations

04 **If the TTC zone affects the movement of pedestrians, adequate pedestrian access and walkways shall be provided. If the TTC zone affects an accessible and detectable pedestrian facility, the accessibility and detectability shall be maintained along the alternate pedestrian route.**

- **Alternate ped facilities are required if TTC affects existing ped facilities**

SR 2 at Hazel Ave / VA Hospital

Section 6D.01 Pedestrian Considerations

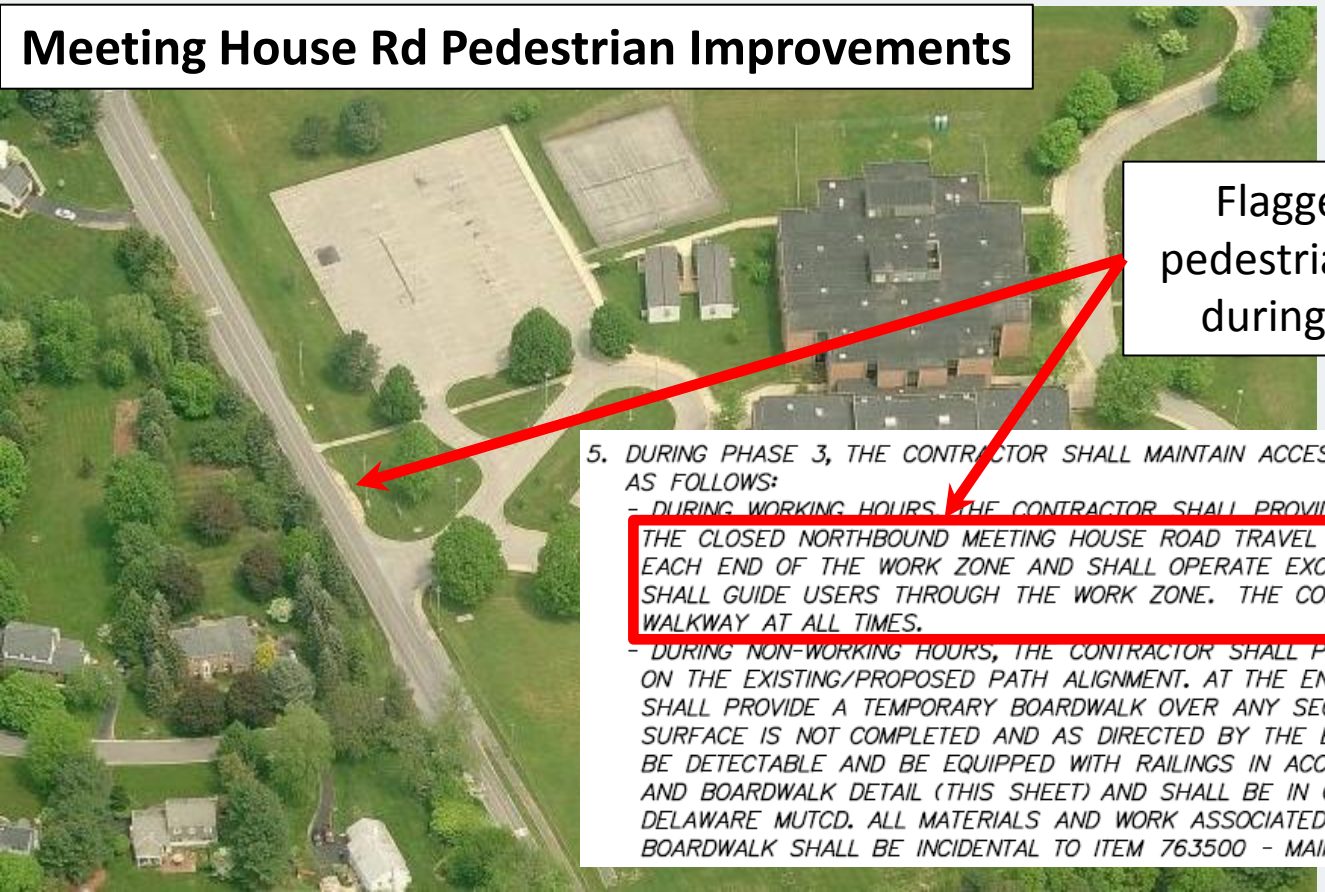
NOT COMPLIANT!

Option:

05 If establishing or maintaining an alternate pedestrian route is not feasible during the project, an alternate means of providing for pedestrians may be used, such as adding free bus service around the project or assigning someone the responsibility to assist pedestrians with disabilities through the project limits.

- If an alternate ped route is infeasible, providing free bus service or assigning personnel to assist are options

Meeting House Rd Pedestrian Improvements



Flaggers will be used to assist pedestrians through the work zone during sidepath reconstruction

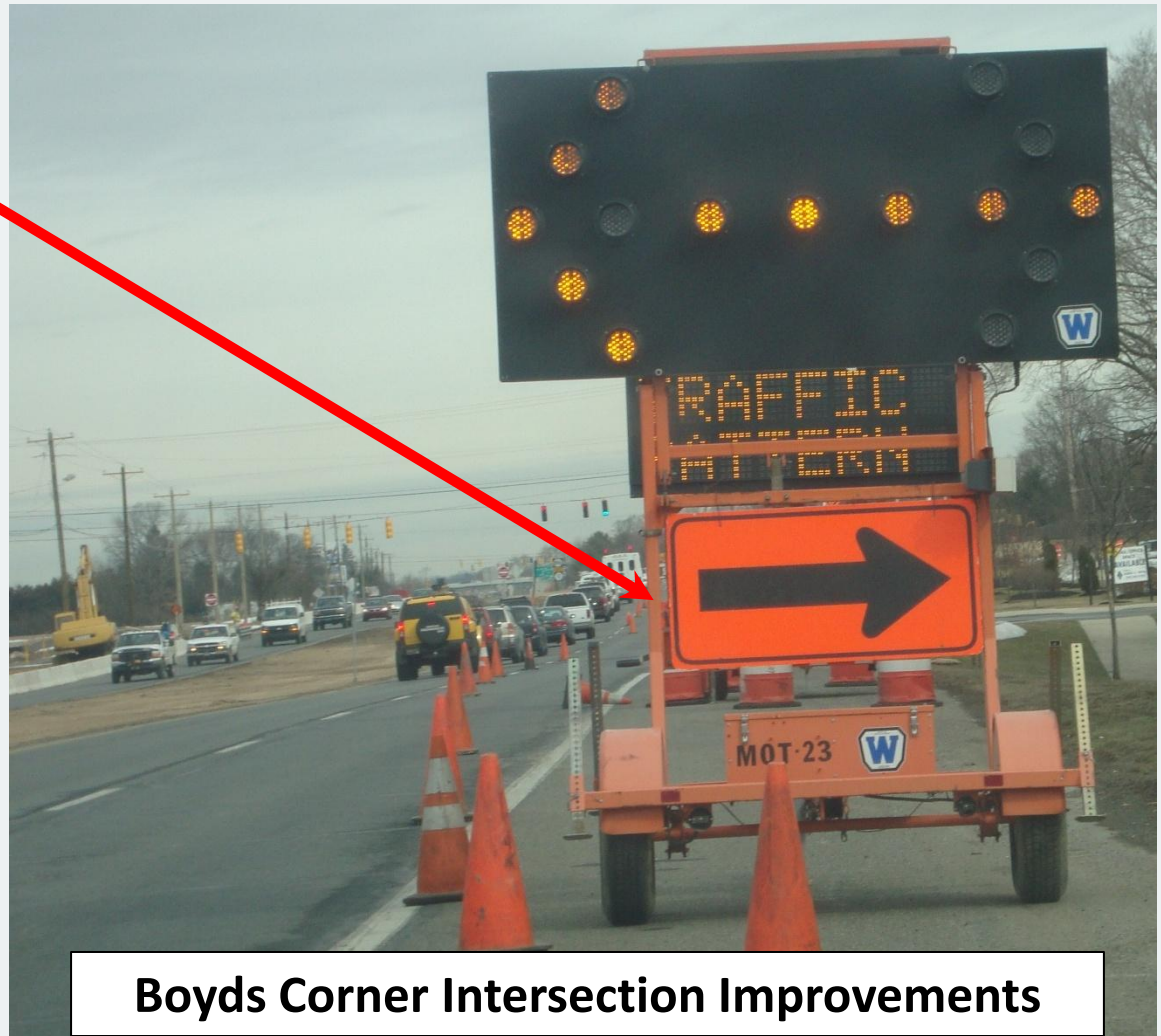
5. DURING PHASE 3, THE CONTRACTOR SHALL MAINTAIN ACCESS FOR PEDESTRIANS THROUGH THE WORK ZONE AS FOLLOWS:
   - DURING WORKING HOURS, THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE WORK ZONE WITHIN THE CLOSED NORTHBOUND MEETING HOUSE ROAD TRAVEL LANE. ONE FLAGGER SHALL BE POSITIONED AT EACH END OF THE WORK ZONE AND SHALL OPERATE EXCLUSIVELY FOR PEDESTRIANS. THE FLAGGERS SHALL GUIDE USERS THROUGH THE WORK ZONE. THE CONTRACTOR SHALL MAINTAIN A FIVE-FOOT WIDE WALKWAY AT ALL TIMES.
   - DURING NON-WORKING HOURS, THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE WORK ZONE ON THE EXISTING/PROPOSED PATH ALIGNMENT. AT THE END OF EACH WORKING DAY, THE CONTRACTOR SHALL PROVIDE A TEMPORARY BOARDWALK OVER ANY SECTION OF THE PATH WHERE THE FINAL CONCRETE SURFACE IS NOT COMPLETED AND AS DIRECTED BY THE ENGINEER. THE TEMPORARY BOARDWALK SHALL BE DETECTABLE AND BE EQUIPPED WITH RAILINGS IN ACCORDANCE WITH THE TEMPORARY CURB RAMP AND BOARDWALK DETAIL (THIS SHEET) AND SHALL BE IN COMPLIANCE WITH SECTION 6F.58 OF THE DELAWARE MUTCD. ALL MATERIALS AND WORK ASSOCIATED WITH THE TEMPORARY CURB RAMP AND BOARDWALK SHALL BE INCIDENTAL TO ITEM 763500 - MAINTANENCE OF TRAFFIC.

Section 6F.61 Arrow Boards

08A **(DE Revision) A One-Direction Large Arrow (W1-6) sign shall be centered below and attached to the bottom of all trailer-mounted arrow boards.**

08B **(DE Revision) The One-Direction Large Arrow (W1-6) sign shall point in the direction that traffic should merge and shall be covered or removed when not in use or when caution mode is being displayed on the trailer mounted arrow board.**

- DE Standard: **W1-6 sign shall match direction of arrow board**
- DE Standard: **W1-6 sign removed or covered during caution mode**



Boyds Corner Intersection Improvements

Section 6F.63 Channelizing Devices & Section 6F.67 Drums

08 (DE Revision) The spacing between cones, tubular markers, vertical panels, drums, and barricades should not exceed a distance in feet equal to 1.0 times the speed limit in mph and should not exceed 60 feet when used for both taper channelization and tangent channelization.

- DE Guidance: *Longitudinal spacing (ft) = Speed limit (mph); 60 ft MAX.*

Option:

06 (DE Revision) Two ballast rings ("tire rings") may be used to minimize drum displacement due to passing vehicles or high winds.

Support:

07 (DE Revision) The use of two ballast rings has been found to minimize the chance a drum could be blown over by a truck or other vehicle passing by at high speed, particularly on roads with posted speed limits of 55 mph or higher, or having the drum blow over due to high winds.

- DE Option: Two ballasts to minimize drum displacement on high-speed roads or in areas with high winds

Interstate Bridge Maintenance, I-495

Section 6F.78 Temporary Pavement Markings

Guidance:

02 *(DE Revision) Unless justified based on engineering judgment, temporary pavement markings should not remain in place for more than 30 days after the application of the pavement surface treatment or the construction of the final pavement surface on new roadways or over existing pavements.*

03 *The temporary use of edge lines, channelizing lines, lane-reduction transitions, gore markings, and other longitudinal markings, and the various non-longitudinal markings (such as stop lines, railroad crossings, crosswalks, words, symbols, or arrows) should be in accordance with the State's or highway agency's policy.*

- DE Guidance: *Should not remain in place longer than 30 days*
- *Installed based on DelDOT's Temporary Pavement Markings Policy*
  - **Shall comply with Part 3**
  - **Width of longitudinal lines: 4 in MIN.**
  - http://www.deldot.gov/information/pubs_forms/manuals/de_mutcd/pdf/Temporary_Pavement_Markings_Policy.pdf

MEMORANDUM

To: All Users of the Delaware Manual on Uniform Traffic Control Devices

From: Adam S. Weiser, P.E., PTOE
Safety Programs Manager

Date: January 7, 2011

Subject: Temporary Pavement Markings Policy

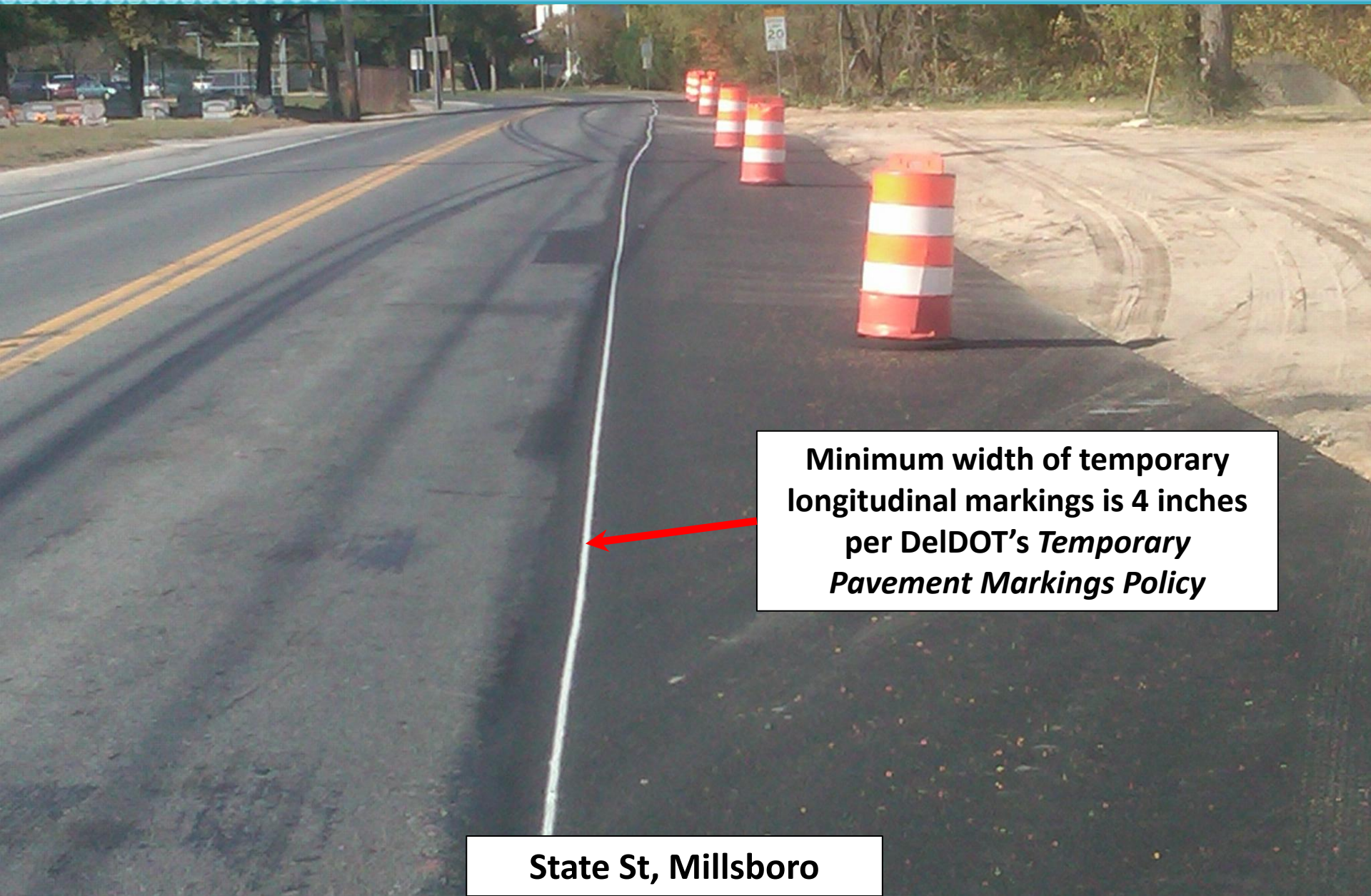
Section 6F.72 of the Delaware Manual on Uniform Traffic Control Devices (DE MUTCD) suggests that the State develop a policy regarding the use of temporary pavement markings for highway work zones. As such, this memorandum defines the policy for the use of temporary pavement markings within highway work zones on roadways within the jurisdiction of the Delaware Department of Transportation (DelDOT). This policy covers the widths of longitudinal pavement markings, the required markings for long-term stationary operations and the required markings between lifts of pavement during paving operations.

A. Temporary Pavement Marking Dimensions

The widths of all temporary pavement markings, including centerlines, edge lines and other longitudinal pavement markings shall comply with Section 3A.05 of the DE MUTCD. This Section requires that the minimum width of a normal line be 4-inches. As such, longitudinal temporary pavement markings on all roadways shall be no less than 4-inches wide. The layout of temporary pavement markings shall match the layout of existing pavement markings, i.e, provide a 6-inch wide gap between centerlines, no single solid yellow centerlines, etc. The width of transverse pavement markings shall be as described in the applicable sections of Part 3 of the DE MUTCD. Typical dimensions for common transverse markings are as follows:

- Stop lines = 16 inches wide
- Crosswalk markings:
  - Piano key markings = 24 inches wide
  - Parallel transverse markings = 12 inches wide with a minimum 6 feet separation between lines (allowable for temporary crosswalk markings only)

Section 6F.78 Temporary Pavement Markings



Section 6F.83 Warning Lights

Guidance:

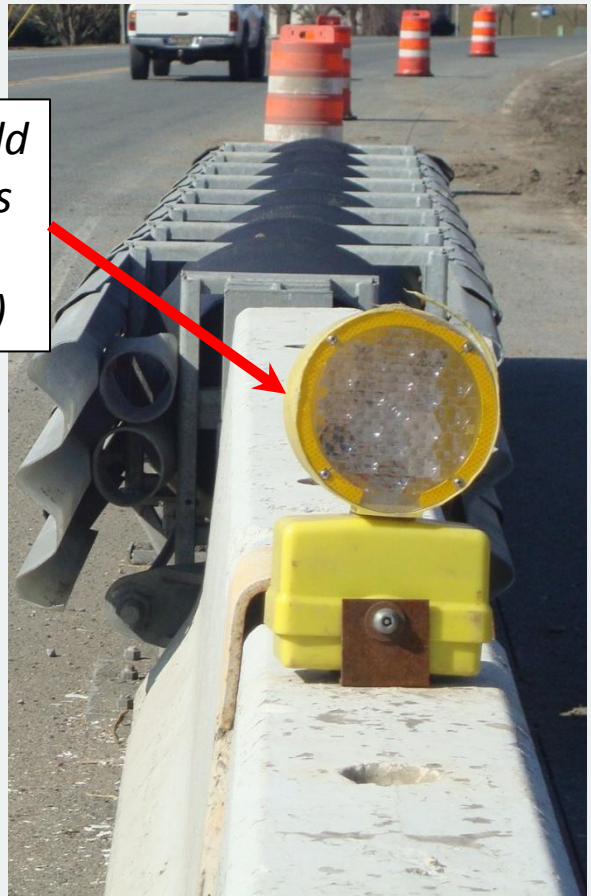
01A *(DE Revision) Except as provided in Paragraph 1B, warning lights should not be used on state-maintained roads.*

Option:

01B (DE Revision) When added conspicuity is desired, only Type B warning lights may be used.

- DE Guidance: *Warning lights no longer required on TTC devices*

Type B warning lights should not be used on TTC devices (e.g., barricades and temporary traffic barriers)



SR 2 at Hazel Ave / VA Hospital

Section 6F.85 Temporary Traffic Barriers

Guidance:

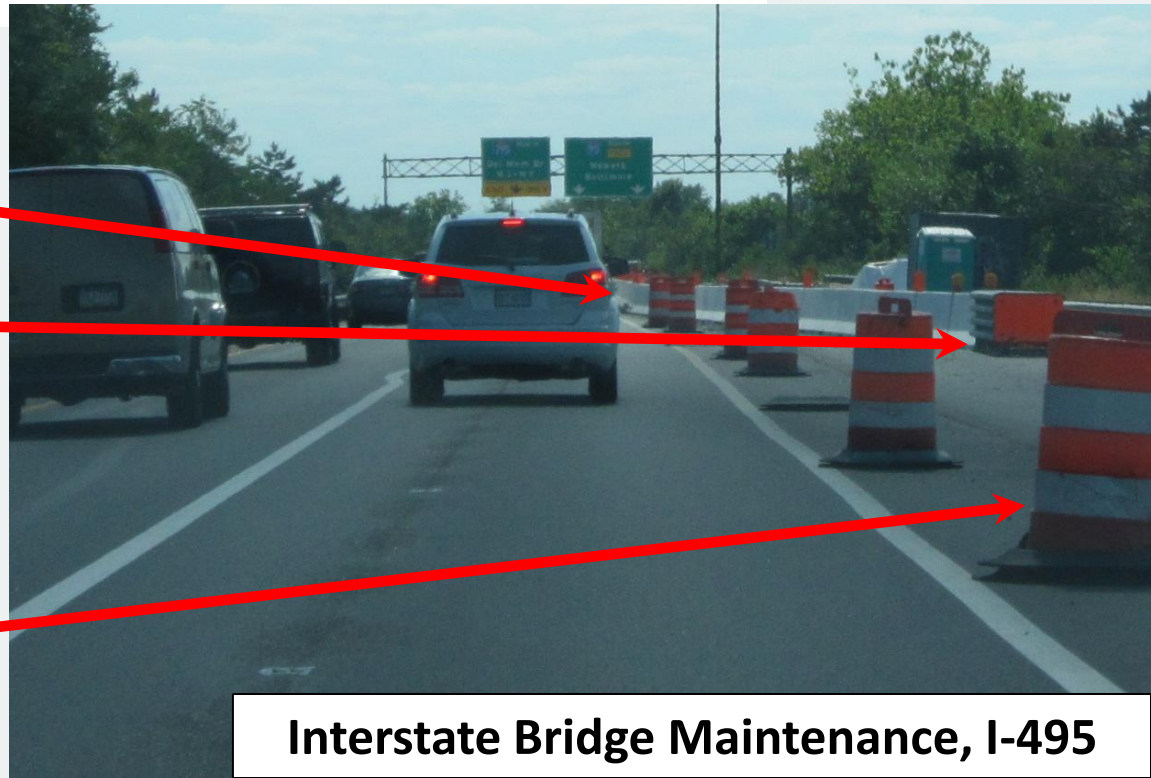
06E *(DE Revision) On state-maintained roads with a posted or 85th percentile speed greater than 40 mph, the rate of taper for the flare of a traffic barrier should be 17:1. If space constraints limit the length of flare, a minimum taper rate of 11:1 should be used.*

06F *(DE Revision) When space permits, the leading edge of the attenuator/barrier should have a lateral offset of at least 12 feet from the traveled way.*

06G *(DE Revision) If unpinned barrier is used, a lateral offset of at least 5 feet should be provided between the barrier and the work area. Consideration should be given to pinning the barrier if work is performed within 5 feet of the barrier.*

06H *(DE Revision) When space permits, channelizing devices should be placed along the tangent section of the traveled way for a distance equal to the buffer space measured from the intersection of the barrier and the right-hand edge of the closed travel lane (see Figure 6H-34).*

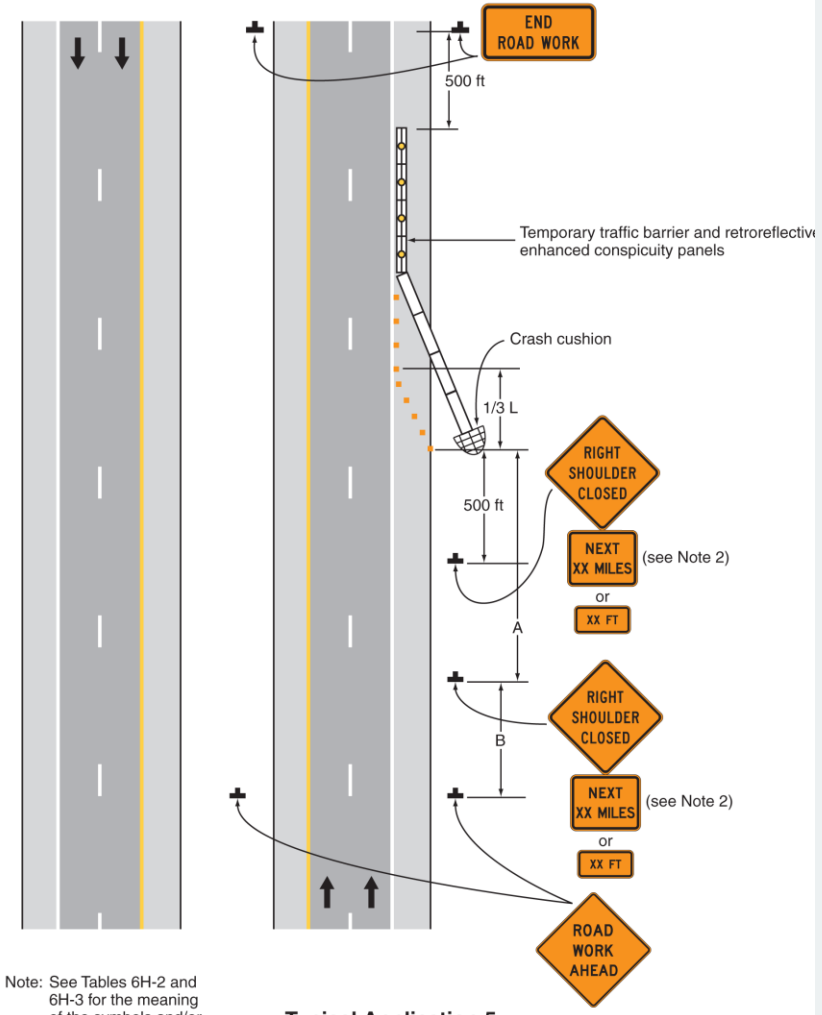
- DE Guidance:
  - *17:1 flare rate*
  - *Min. 12’ lateral offset at leading edge*
  - *5’ “clear zone” behind unpinned barrier*
  - *Buffer space along tangent*



Interstate Bridge Maintenance, I-495

- New typical applications in DE MUTCD depicting barrier applications

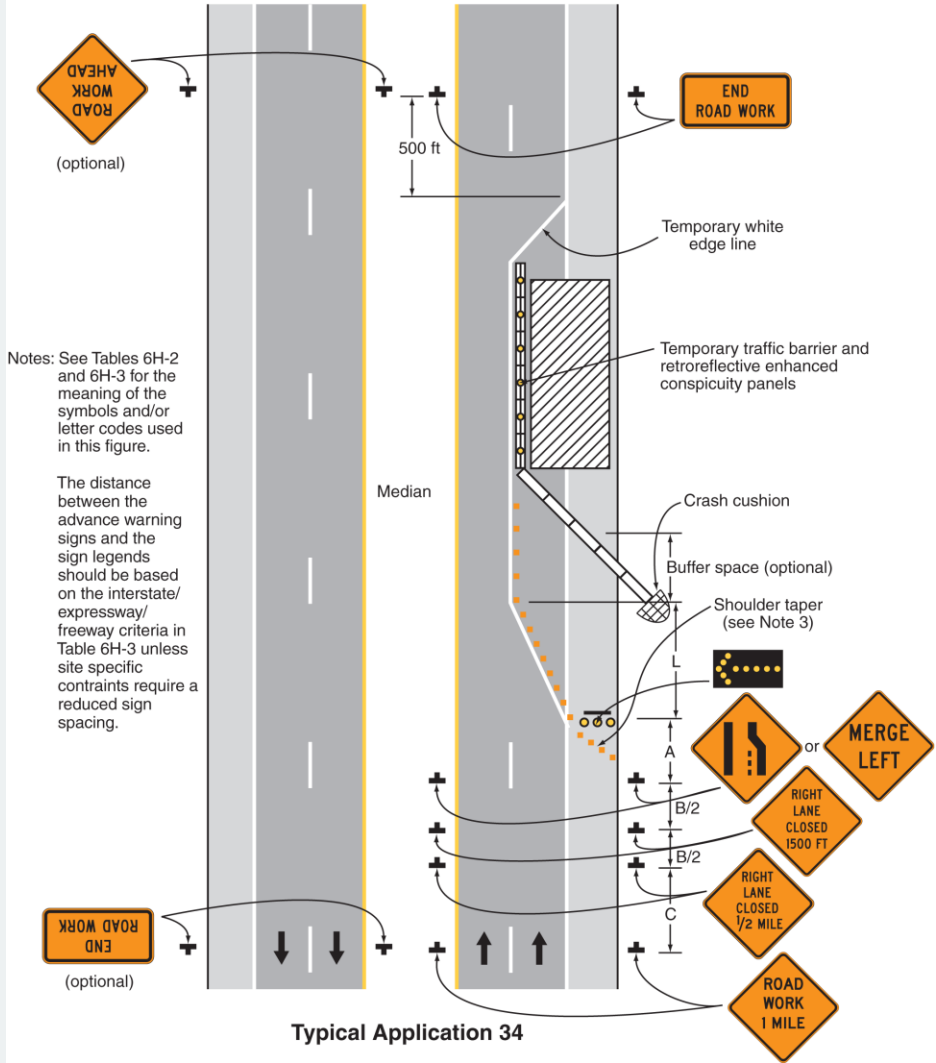
Figure 6H-5. Shoulder Closure on an Interstate, Freeway, or Expressway with a Temporary Traffic Barrier (TA-5)
(Delaware Revision)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 5

Figure 6H-34. Lane Closure on a Multi-Lane, Divided Highway with a Temporary Traffic Barrier (TA-34)
(Delaware Revision)



Notes: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

The distance between the advance warning signs and the sign legends should be based on the interstate/ expressway/ freeway criteria in Table 6H-3 unless site specific contraints require a reduced sign spacing.

Typical Application 34

Section 6F.86 Crash Cushions

04B *(DE Revision) Sand crash cushion arrays should not be used in applications that could result in a reverse strike by vehicles traveling in the opposite direction. It is acceptable to use sand crash cushion arrays if they are outside the clear zone of the opposite direction of traffic.*

Option:

04E (DE Revision) Sand crash cushions may be used for short-duration maintenance purposes or for long-term projects where it is infeasible to install an impact attenuator.

Guidance:

04F *(DE Revision) Stationary impact attenuators should be used instead of sand crash cushions for most long-term projects and, where practical, for short-duration maintenance purposes.*

04G *(DE Revision) Except for short-duration maintenance purposes, sand crash cushions should not be used without DelDOT Traffic approval.*

- DE Guidance: *Sand crash cushions generally reserved for short-duration maintenance*
- DE Guidance: *Sand crash cushions should not be installed where reverse strikes are possible*

SR 12, Frederica

DelDOT
Delaware Department of Transportation

Section 6G.20 Vertical Difference

- DE Standard: **Vertical difference treatments based on Table 6G-1 criteria**

Sussex Road 213

Table 6G-1. Vertical Difference (Delaware Revision)

Type of Vertical Difference	Criteria	Height (H) of Vertical Difference			
		H ≤ 1 in	1 in < H ≤ 2 in	2 in < H ≤ 6 in	H > 6 in
Longitudinal ≤ 10 ft from edge of traveled way[1]	Standard	No channelizing devices required	- For differences along or between traveled ways, the UNEVEN LANES (W8-11) sign shall be used - For differences between the traveled way and shoulder or at the edge of pavement, the LOW SHOULDER (W8-9) sign shall be used	- No shoulder or shoulder < 4 ft wide: If the vertical difference is not eliminated by the end of the work day, a 4 to 1 fillet of wedge material shall be placed or temporary traffic barrier shall be installed. During the day of construction, channelizing devices shall be used to delineate the vertical difference until the vertical difference is eliminated, a 4 to 1 fillet of wedge material is placed, or temporary traffic barrier is installed. - Shoulder ≥ 4 ft wide: Drums shall be used to delineate the vertical difference for up to 5 calendar days. If the vertical difference is not eliminated by the end of the 5th calendar day, a 4 to 1 fillet of wedge material shall be placed or temporary traffic barrier shall be installed. - The Shoulder Drop Off (W8-17) sign shall be used until the vertical difference is eliminated	If the vertical difference is not eliminated by the end of the work day, a 4 to 1 fillet of wedge material shall be placed or temporary traffic barrier shall be installed.
	Guidance		- For differences between the traveled way and shoulder or at the edge of pavement, wedge material is not required if the vertical difference exists for less than 5 calendar days. If the vertical difference is not eliminated by the end of the 5th calendar day, a 4 to 1 fillet of wedge material should be placed. - Throughout the duration of the vertical difference condition, drums should be placed between the traveled way and shoulder or along the edge of pavement		
	Option			TTC devices and correction may be omitted for new pavement surfaces with the Safety Edge	
Longitudinal > 10 ft to ≤ 30 ft from edge of traveled way[1,2]	Standard	No channelizing devices required	No channelizing devices required	- Throughout the duration of the vertical difference condition, drums shall be placed between the traveled way and shoulder or along the edge of pavement - If the vertical difference is within the traveled way or shoulder, the Shoulder Drop Off (W8-17) sign shall be used until the vertical difference is eliminated	Throughout the duration of the vertical difference condition, drums shall be placed between the traveled way and shoulder or along the edge of pavement
	Guidance				Temporary traffic barrier should be considered
Transverse	Standard	No channelizing devices required	- Except for roadway obstacles such as manholes and utility valves, BUMP (W8-1) or DIP (W8-2) signs shall be installed - A ramp of bituminous temporary roadway material shall be installed at a slope of 20 to 1 across the limits of the vertical difference, including the perimeter of an obstacle	- Except for roadway obstacles such as manholes and utility valves, BUMP (W8-1) or DIP (W8-2) signs shall be installed - A ramp of bituminous temporary roadway material shall be installed at a slope of 20 to 1 across the limits of the vertical difference, including the perimeter of an obstacle	- Except for roadway obstacles such as manholes and utility valves, BUMP (W8-1) or DIP (W8-2) signs shall be installed - A ramp of bituminous temporary roadway material shall be installed at a slope of 20 to 1 across the limits of the vertical difference, including the perimeter of an obstacle

[1] – Per Section 1A.13, the traveled way is defined as the portion of the roadway for the movement of vehicles, exclusive of the shoulders, berms, sidewalks, and parking lanes
[2] – Channelizing devices are not required if the vertical difference is located behind guardrail, barrier, or vertical curb

Table 6G-2. Storage of Equipment (Delaware Revision)

Road Type	Distance (L) from Edge of Traveled Way	Posted Speed Limit or 85th-Percentile Speed	Minimum Required Channelizing Devices
Equipment and Non-flammable Materials			
Interstate, Freeway, or Expressway	L ≤ 30 ft	All	Temporary traffic barrier
	L > 30 ft	All	Drums
All other roadways	0 ≤ L ≤ 10 ft	25 mph or less	Drums
		More than 25 mph	Temporary traffic barrier
	10 ft < L ≤ 30 ft	25 mph or less	None
		More than 25 mph	Drums
	L > 30 ft	All	None
Flammable Materials (fuel, propane, etc.)			
Interstate, Freeway, or Expressway	L ≤ 30 ft	All	Temporary traffic barrier
	L > 30 ft	All	Drums
All other roadways	L ≤ 30 ft	All	Temporary traffic barrier
	L > 30 ft	All	None

- DE Standard: **Treated as roadside obstacle per Table 6G-2**

US 13, Camden

Table 6H-1. Index to Typical Applications (Sheet 1 of 2)
(Delaware Revision)

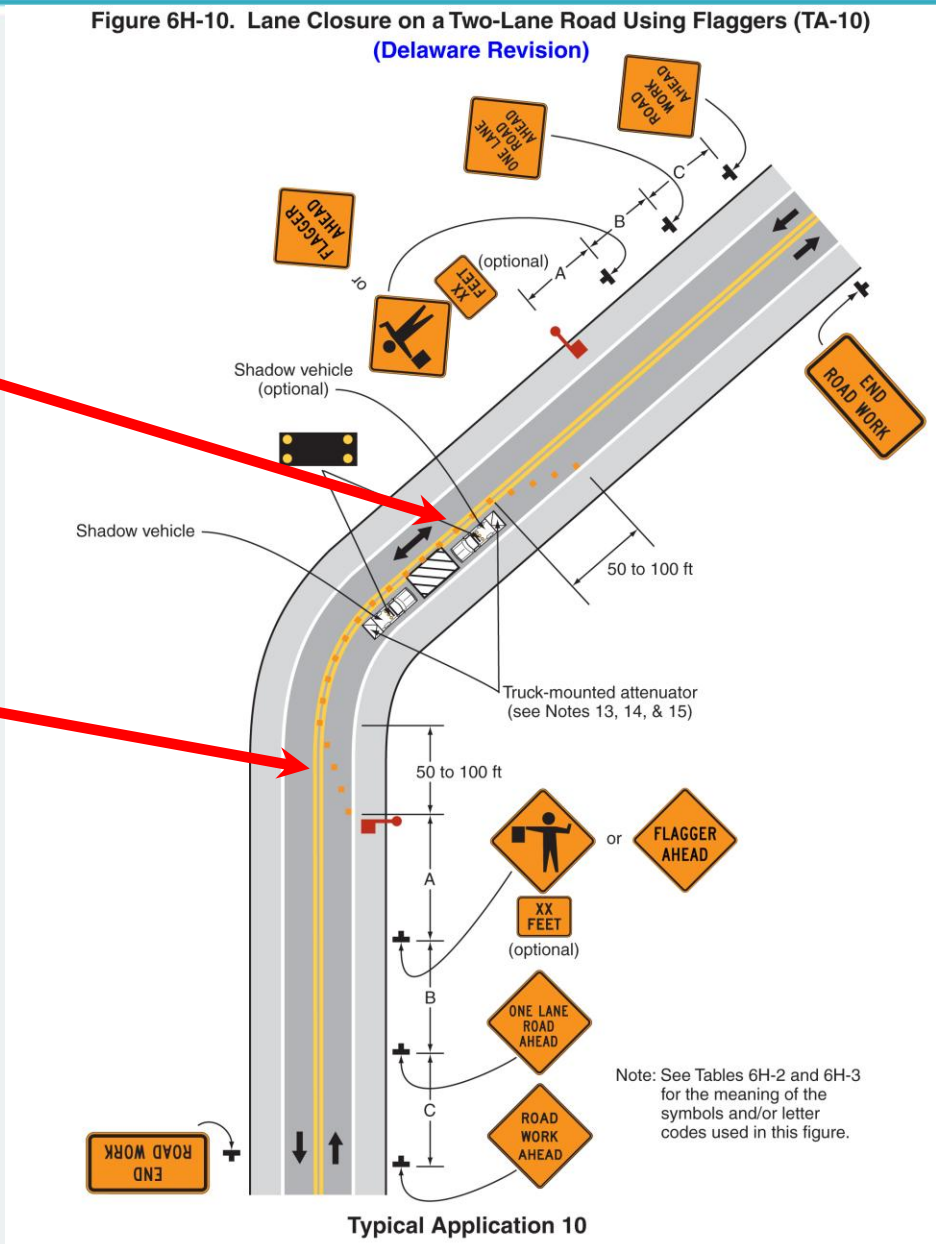
Typical Application Description	Typical Application Number		
	Two-Lane Conventional Road	Multi-Lane Conventional Road	Interstate, Freeway, or Expressway
Work Outside of the Shoulder (see Section 6G.06)			
Work Beyond the Shoulder > 10 Feet from the Edge of the Traveled Way	TA-1	TA-3A	TA-5 or TA-5A
Work Beyond the Shoulder ≤ 10 Feet from the Edge of the Traveled Way	TA-3	TA-3A	TA-5 or TA-5B
Off-Roadway Mowing Operations	TA-1A	TA-1B	TA-1B
Blasting Zone	TA-2	TA-2	TA-2
Work on the Shoulder (see Sections 6G.07 and 6G.08)			
Work on the Shoulders	TA-3	TA-3A	TA-5 or TA-5B
Short Duration or Mobile Operation on a Shoulder	TA-4	TA-4A	TA-4A
Shoulder Work with Minor Encroachment	TA-6 (≤ 40 MPH) or TA-10 (> 40 MPH)	TA-33	TA-33
Work Within the Traveled Way of a Two-Lane Highway (see Section 6G.10) – also applicable to other roadway types, as noted			
Road Closed with a Diversion	TA-7	TA-7	TA-7
Roads Closed with an Off-Site Detour	TA-20	TA-20	TA-20
Overlapping Routes with a Detour	TA-20	TA-20	TA-20
Lane Closure on a Two-Lane Road Using Flaggers	TA-10	-	-
Lane Closure on a Two-Lane Road with Low Traffic Volumes	TA-11 or TA-11A	-	-
Lane Diversion on a Two-Lane Road with Low Traffic Volumes	TA-11B	-	-
Lane Closure on a Two-Lane Road Using Traffic Control Signals	TA-12	-	-
Temporary Road Closure	TA-13	-	-
Haul Road Crossing	TA-14	TA-14	-
Work in the Center of a Road with Low Traffic Volumes	TA-15	-	-
Surveying Along the Center Line of a Road with Low Traffic Volumes	TA-16	-	-
Mobile Operations on a Two-Lane Road	TA-17	-	-
Mobile Striping Operations on a Two-Lane Road	TA-17A or TA-17B	-	-
Work Within the Traveled Way of an Urban Street (see Section 6G.11) – also applicable to other roadway types, as noted			
Lane Closure on a Minor Street	TA-18	-	-
Detour for One Travel Direction	TA-20	TA-20	TA-20
Detour for a Closed Street	TA-20	TA-20	TA-20
Work Within the Traveled Way at an Intersection and on Sidewalks (see Section 6G.13)			
Lane Closure on the Near Side of an Intersection	TA-21 (≤ 40 MPH) or TA-33 (> 40 MPH)	TA-21 (≤ 40 MPH) or TA-33 (> 40 MPH)	-
Right-Hand Lane Closure on the Far Side of an Intersection	TA-23 (≤ 40 MPH) or TA-33 (> 40 MPH)	TA-23 (≤ 40 MPH) or TA-33 (> 40 MPH)	-
Left-Hand Lane Closure on the Far Side of an Intersection	TA-23 (≤ 40 MPH) or TA-33 (> 40 MPH)	TA-23 (≤ 40 MPH) or TA-33 (> 40 MPH)	-
Half Road Closure on the Far Side of an Intersection	Not applicable in Delaware	Not applicable in Delaware	-
Multiple Lane Closures at an Intersection	TA-23 (≤ 40 MPH) or TA-33 (> 40 MPH)	TA-23 (≤ 40 MPH) or TA-33 (> 40 MPH)	-
Closure in the Center of an Intersection	Not applicable in Delaware	Not applicable in Delaware	-
Closure at the Side or Center of an Intersection	TA-27	TA-27	-
Sidewalk Detour or Diversion	TA-28	TA-28	-
Crosswalk Closures and Pedestrian Detours	TA-29	TA-29	-
Work Within the Traveled Way of a Multi-Lane, Non-Access Controlled Highway (see Section 6G.12) – also applicable to other roadway types, as noted			
Interior Lane Closure on a Multi-Lane Street	-	TA-30 (≤ 40 MPH) or TA-33 (> 40 MPH)	-
Lane Closure on a Street with Uneven Directional Volumes	-	TA-31 (≤ 40 MPH) or TA-33 (> 40 MPH)	-
Half Road Closure on a Multi-Lane, High-Speed Highway	-	TA-32	-
Stationary Lane Closure on a Divided Highway	-	TA-33	TA-33
Lane Closure with a Temporary Traffic Barrier	-	TA-34	TA-34
Short Duration and Mobile Operations on a Multi-Lane Road	-	TA-35 or TA-35A	TA-35 or TA-35A
Mobile Striping Operations on a Multi-Lane Road		TA-35B or TA-35C	TA-35D, TA-35E, TA-35F, or TA-35G

Table 6H-1. Index to Typical Applications (Sheet 2 of 2)
(Delaware Revision)

Typical Application Description	Typical Application Number		
	Two-Lane Conventional Road	Multi-Lane Conventional Road	Interstate, Freeway, or Expressway
Work Within the Traveled Way of an Interstate, Freeway, or Expressway (see Section 6G.14) – also applicable to other roadway types, as noted			
Lane Shift on a Multi-Lane, Divided Highway	-	TA-36	TA-36
Double Lane Closure on a Multi-Lane, Divided Highway	-	TA-37	TA-37
Interior Lane Closure on a Multi-Lane, Divided Highway	-	TA-37 or TA-38	TA-37 or TA-38
Median Crossover on a Multi-Lane, Divided Highway	-	TA-39	TA-39
Median Crossover for an Entrance Ramp	-	TA-40	TA-40
Median Crossover for an Exit Ramp	-	TA-41	TA-41
Work in the Vicinity of an Exit Ramp	-	TA-42	TA-42
Partial Exit Ramp Closure	-	TA-43	TA-43
Work in the Vicinity of an Entrance Ramp	-	TA-44	TA-44
Temporary Reversible Lane Using Movable Barriers	-	Not applicable in Delaware	Not applicable in Delaware
Work in the Vicinity of a Grade Crossing (see Section 6G.18)			
Work in the Vicinity of a Grade Crossing	TA-45	TA-33	-

- Cases are now Typical Applications (TAs)
- Table 6H-1 provides index for TAs

- Case 6 = TA-10
- DE Option: TMA on downstream end of work area
- *One-lane, two-way taper now 50 to 100 ft*
- *Downstream taper also 50 to 100 ft*



- Case 7 = TA-33
- Removed upstream Merge signs

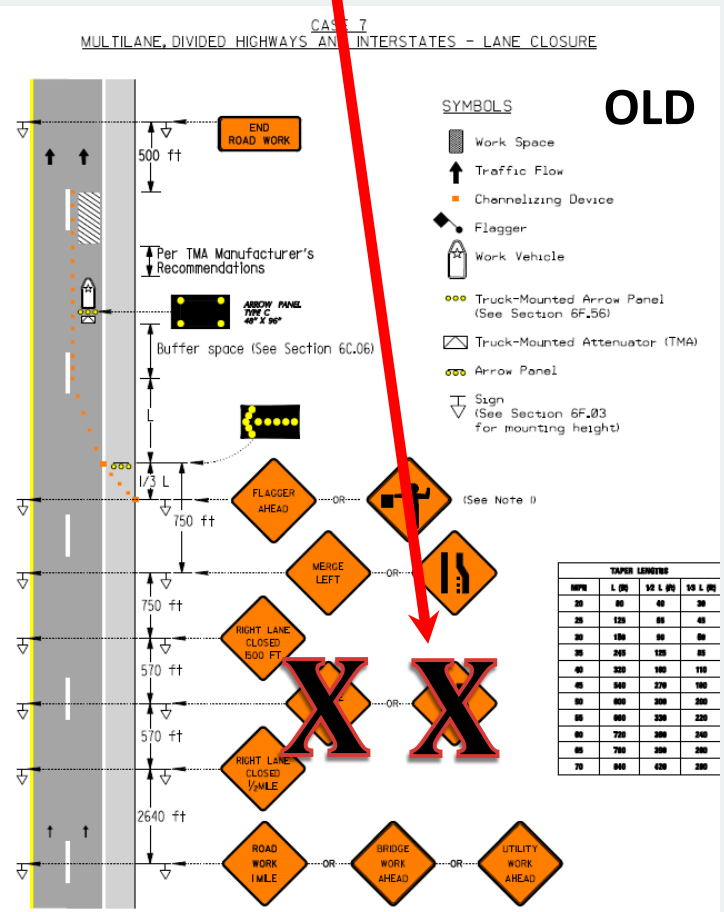
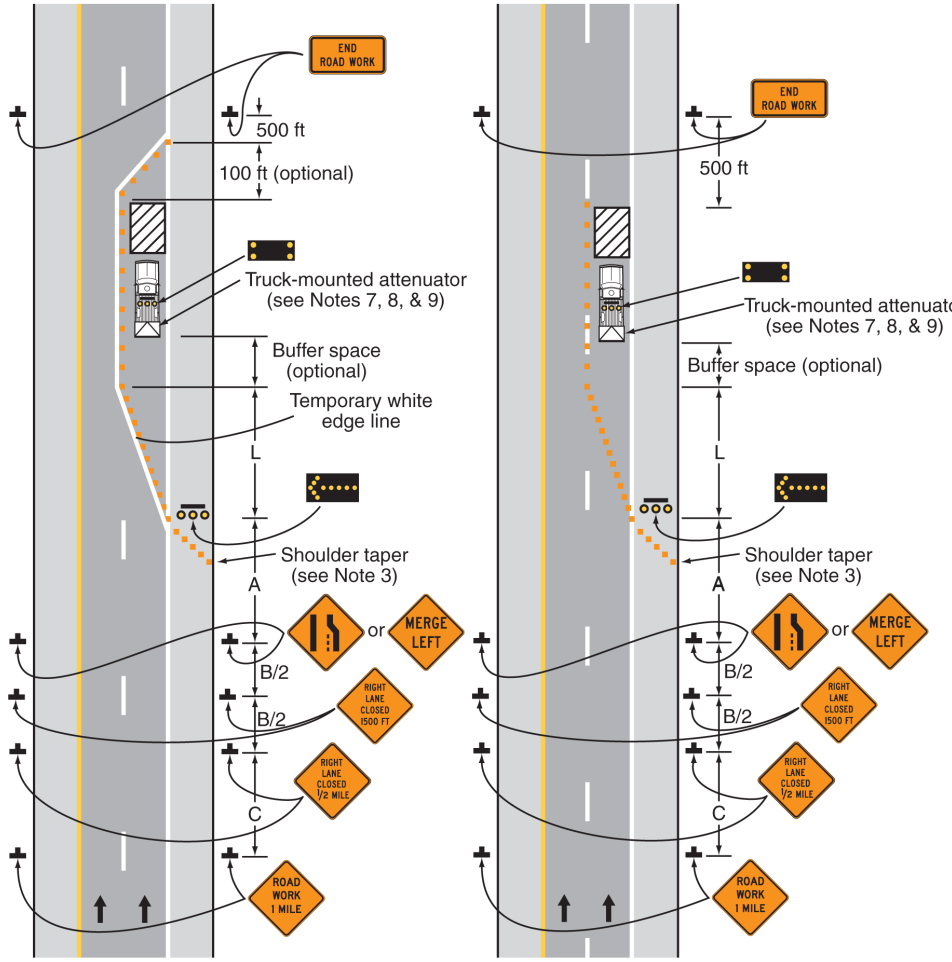


Figure 6H-33. Stationary Lane Closure on a Multi-Lane, Divided Highway (TA-33)
(Delaware Revision)

NEW



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 33

- Case 9 = TA-37
- Removed upstream Merge signs

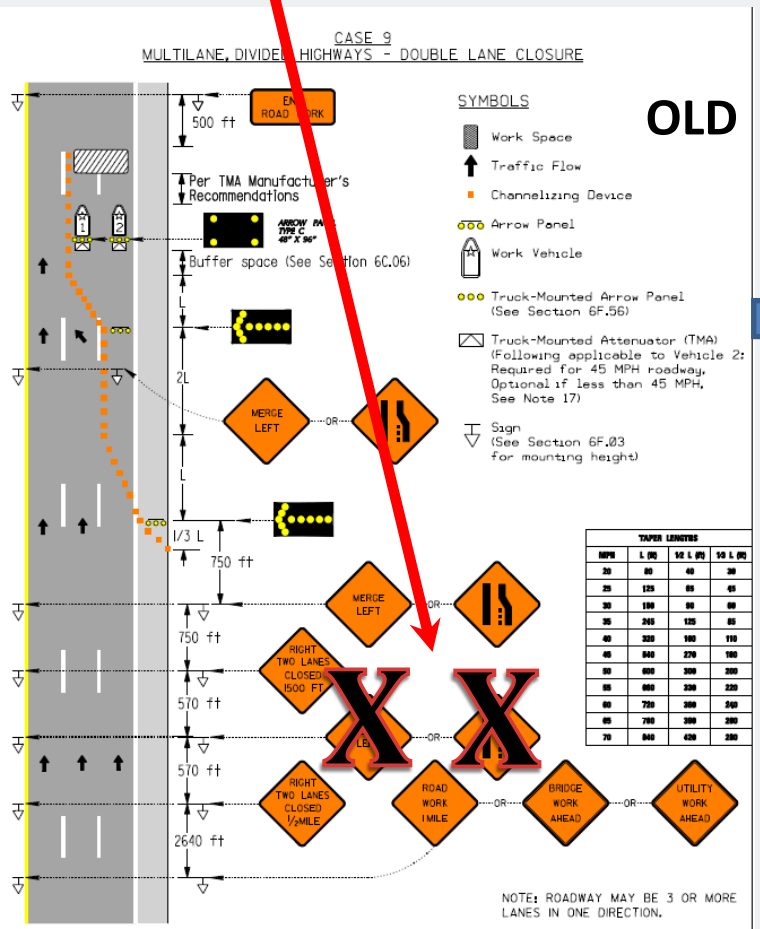
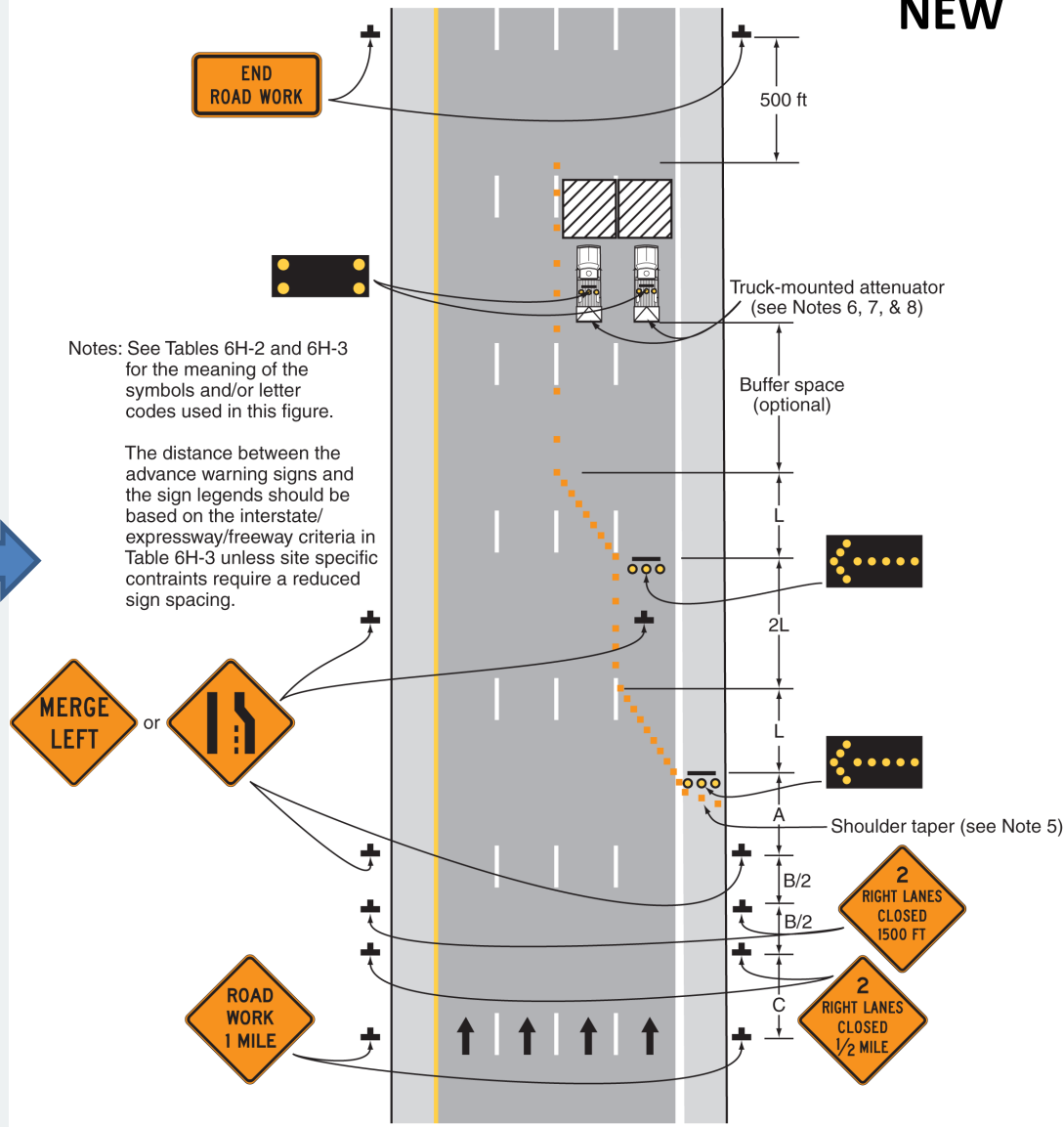


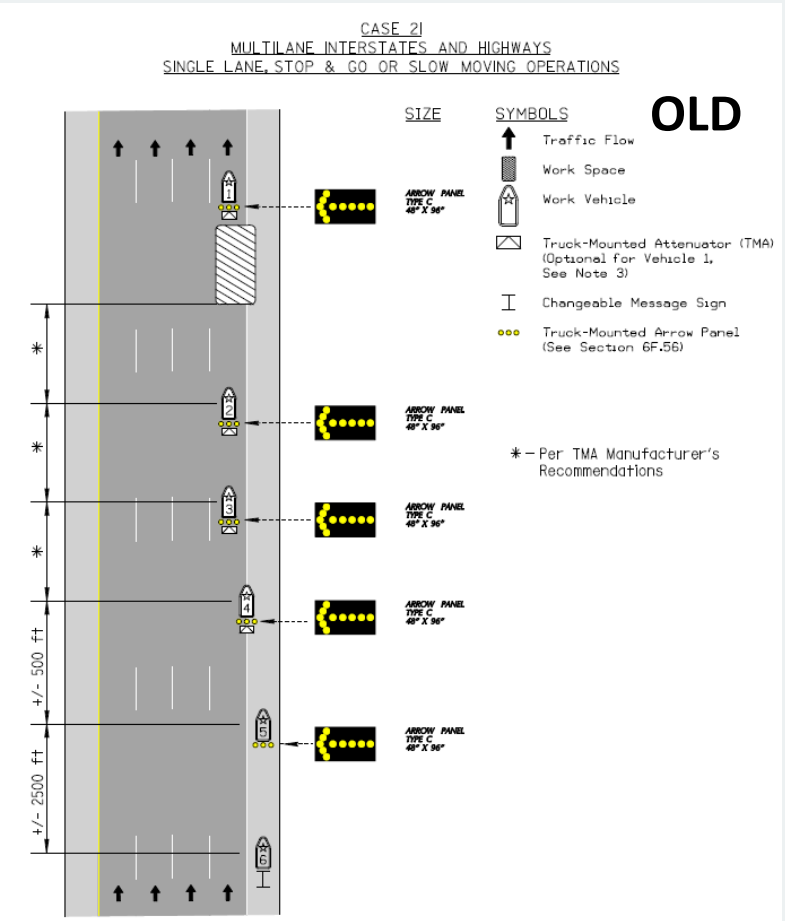
Figure 6H-37. Double Lane Closure on a Multi-Lane, Divided Highway (TA-37)
(Delaware Revision)

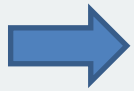
NEW



Typical Application 37

- Case 21 = TA-35
- Fewer shadow vehicles





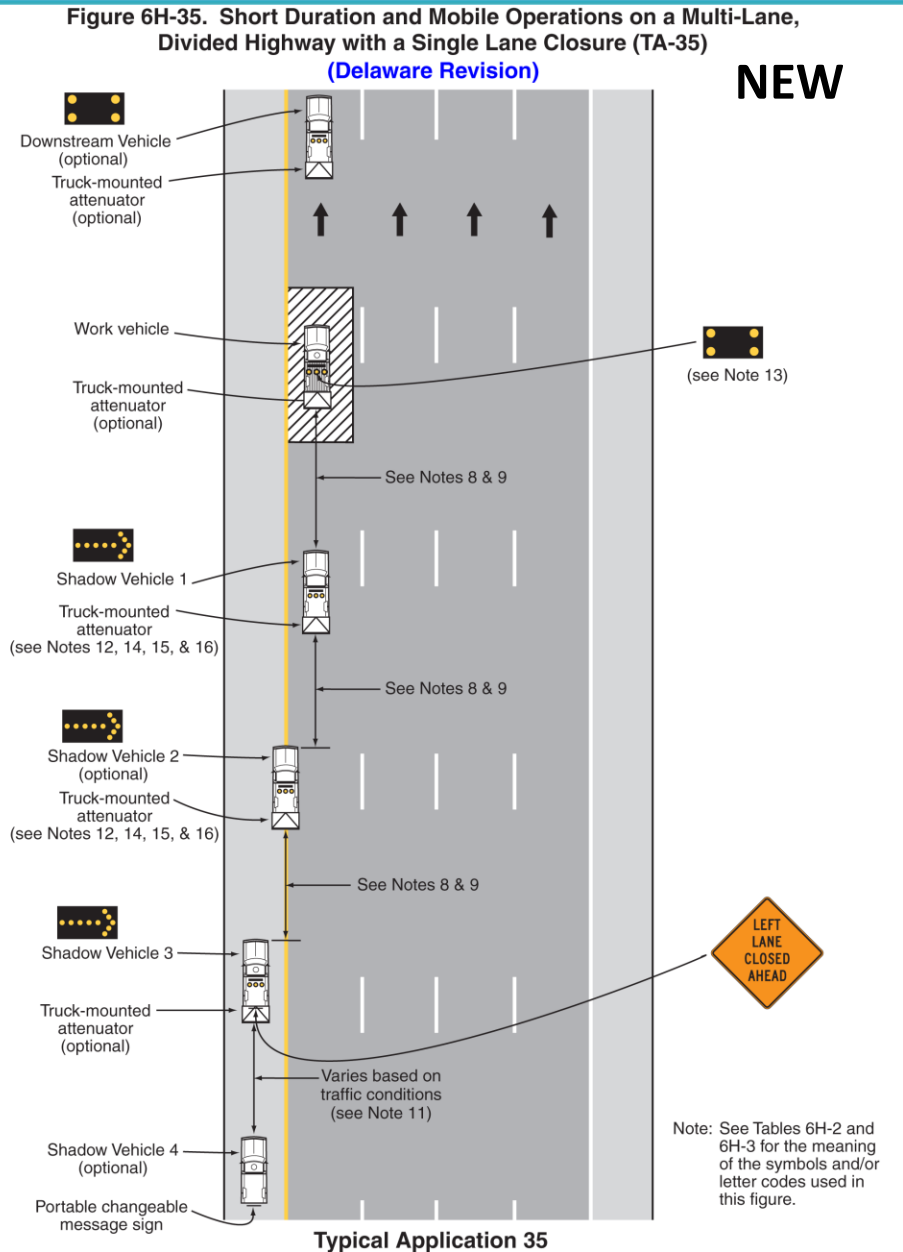
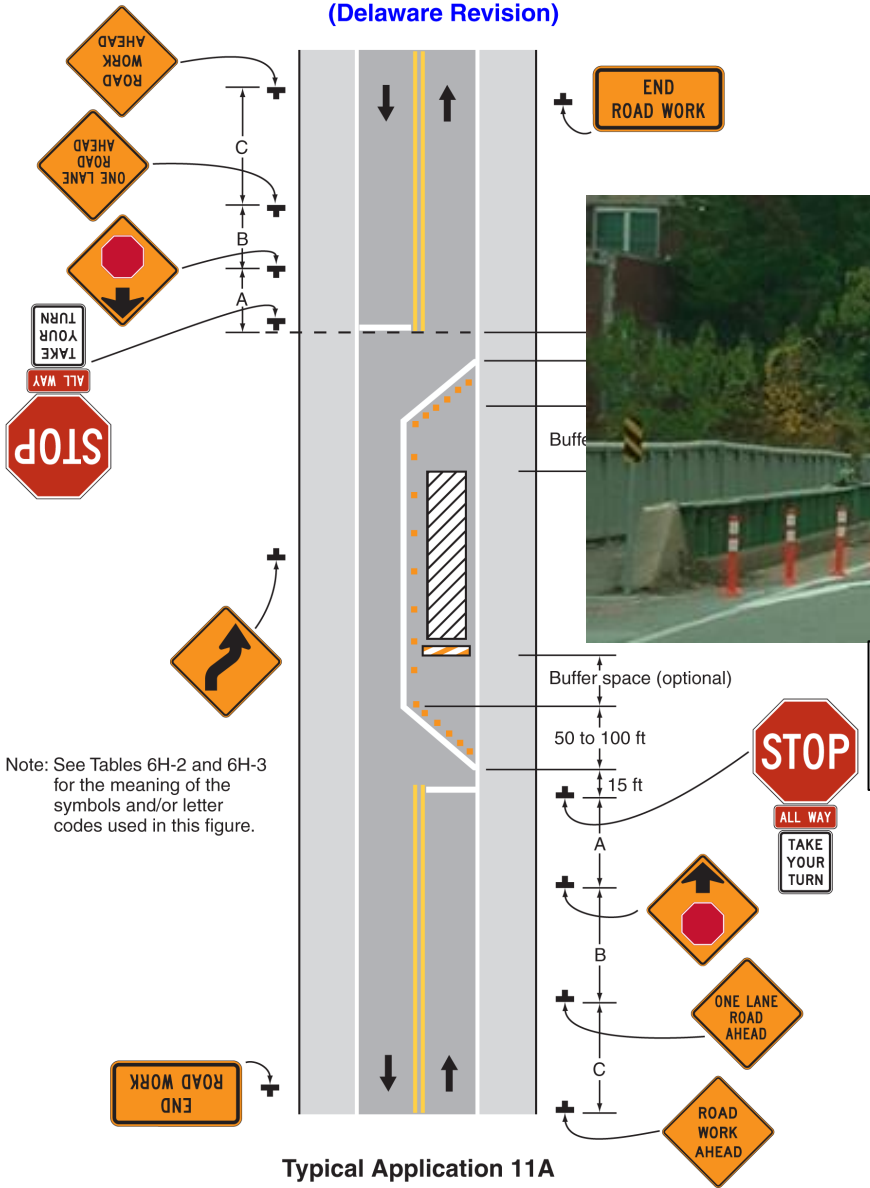


Figure 6H-11A. Lane Closure on a Two-Lane Road with Low Traffic Volumes Using STOP Signs (TA-11A)
(Delaware Revision)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

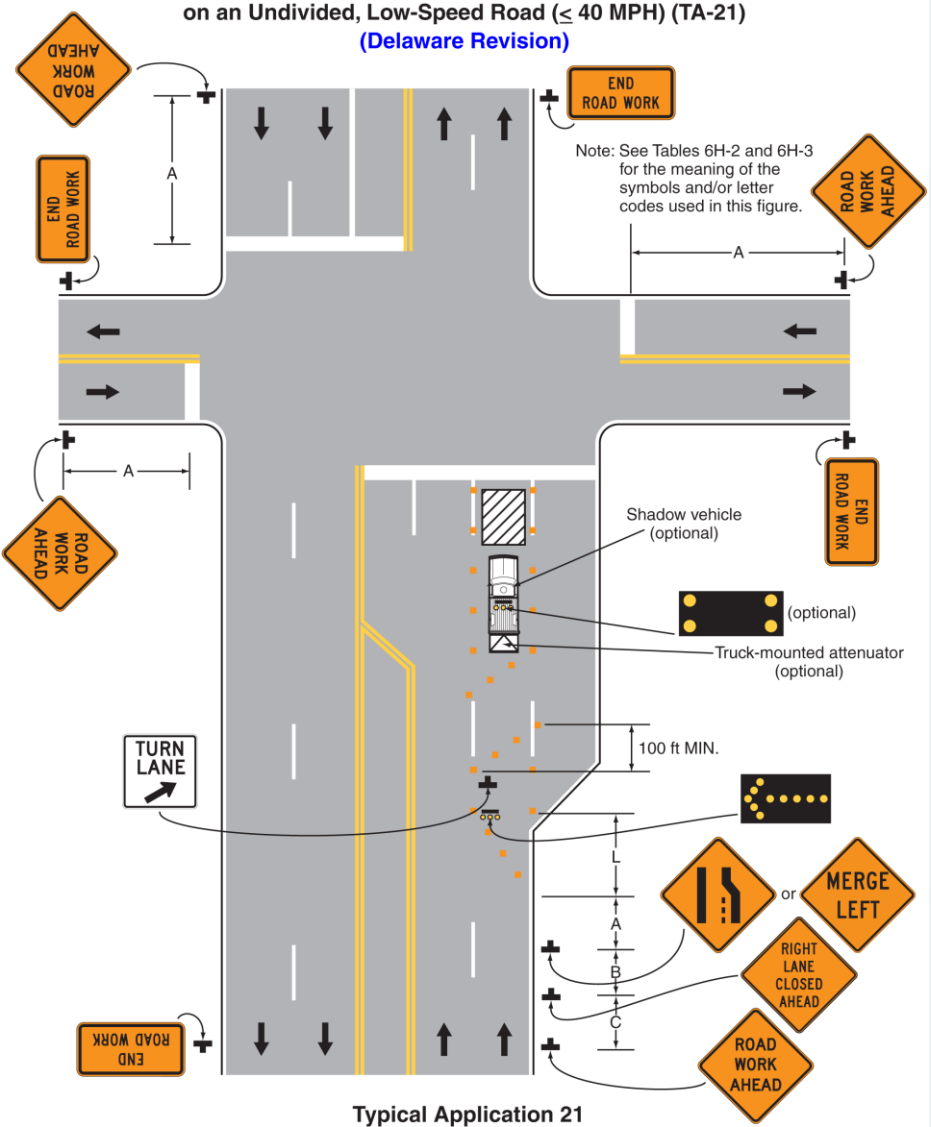
Typical Application 11A

- New typical application in DE MUTCD for stationary lane closures along low volume roads

James St bridge, Newport
Emergency one-lane bridge conversion

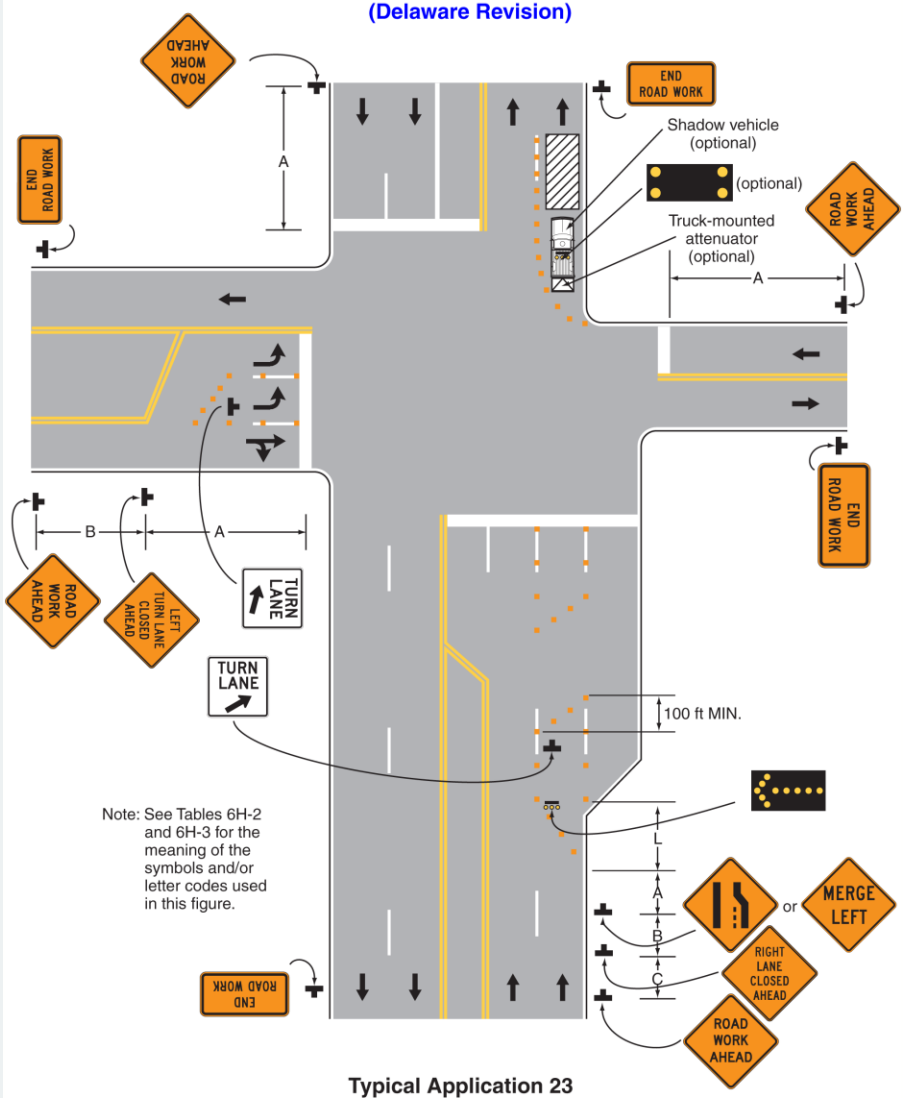
- New typical applications in DE MUTCD for lane closures at intersections

Figure 6H-21. Lane Closure on the Near Side of an Intersection on an Undivided, Low-Speed Road (≤ 40 MPH) (TA-21)
(Delaware Revision)



Typical Application 21

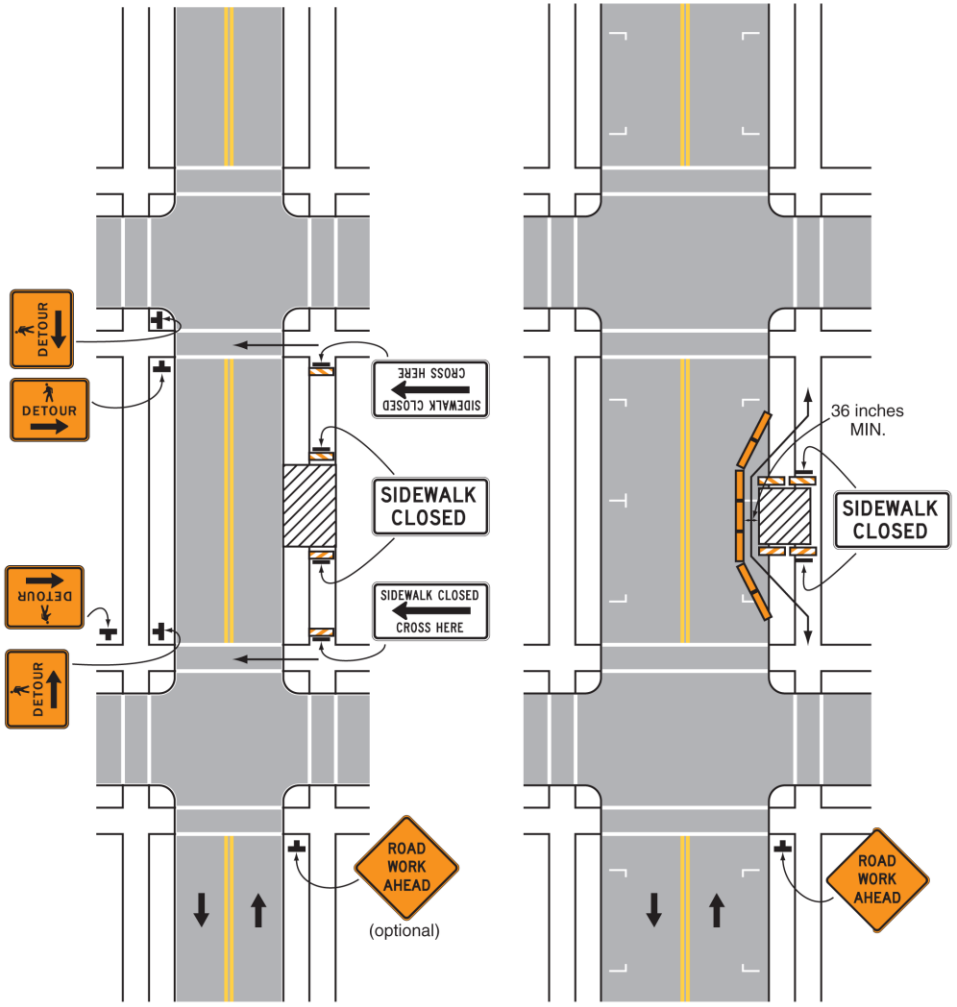
Figure 6H-23. Lane Closure on the Far Side of an Intersection on an Undivided, Low-Speed Road (≤ 40 MPH) (TA-23)
(Delaware Revision)



Typical Application 23

- TA-28 & TA-29: Ped detours

Figure 6H-28. Sidewalk Detour or Diversion (TA-28)
(Delaware Revision)



Typical Application 28

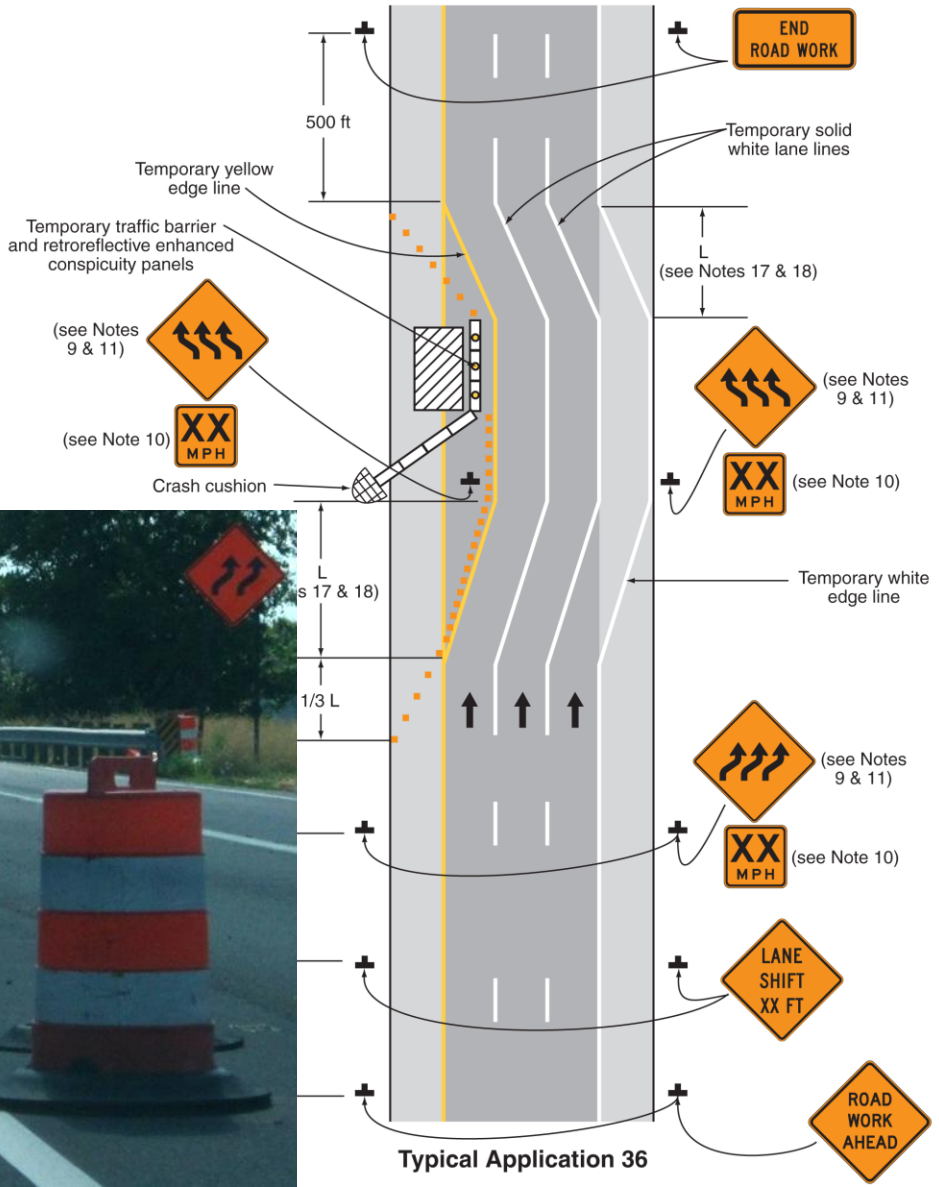
Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

* Preferred application on state-maintained roadways

- New typical application in DE MUTCD for lane shifts on multi-lane highways

Interstate Bridge Maintenance, I-495

Figure 6H-36. Lane Shift on a Multi-Lane, Divided Highway (TA-36)
(Delaware Revision)



Future DE MUTCD Training

- **March 16th – Part 6 (Temporary Traffic Control)**
- April 12th – Part 3 (Markings)
- May 16th – Parts 4 & 7 (Traffic Signals & School Areas)
- June 15th – Parts 8 & 9 (Railroads & Bicycle Facilities)
- T2 course registration

  http://www.ce.udel.edu/dct/T2Courses.html